

Cottonville Bridge
Spanning a branch of Farmer's Creek
on Jackson County Road D-61
Cottonville vicinity
Jackson County
Iowa

HAER No. IA-31

HAER
IOWA,
49-COTV.I.V,
1-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

REDUCED COPIES OF MEASURED DRAWING

Historic American Engineering Record
Rocky Mountain Regional Office
National Park Service
U.S. Department of the Interior
P.O. Box 25287
Denver, Colorado 80225

HISTORIC AMERICAN ENGINEERING RECORD

HAER
IOWA,
49-COT VI. 4,
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Cottonville Bridge

HAER No. IA-31

Location: Spanning a branch of Farmer's Creek on Jackson County Road D-61, 11.8 miles north of Maquoketa and 1.1 miles east of Cottonville SW1/4, SW1/4, Section 21, Township 86 North, Range 3 East, Richland Township, Cottonville vicinity, Jackson County, Iowa

UTM: 15.695900.4678750
Quad: Fulton, Iowa (7.5 Minute Series, 1980)

Date of Construction: circa 1946

Designer: Unknown

Builder: Jackson County road and bridge crew

Fabricator: Bethlehem Steel Corporation, Bethlehem, PA (arch ribs)

Present Owner: Jackson County, Iowa

Present Use: Roadway bridge (scheduled for removal in 1991)

Significance: The Cottonville Bridge is among Iowa's earliest extant examples of welded bridge construction. It is a simply supported, short-span tied arch structure that combines elements that are both anachronistic and innovative. Its arched configuration resembles an updated version of the venerable bowstring arch-truss built widely on Iowa's roads in the 1870s and 1880s. Its extensive use of welded connections at a time in which welded technology was in its formative stages, however, marks the bridge as a sophisticated design exercise.

Report Assembled by: Carl W. McWilliams and Clayton B. Fraser
Fraserdesign
Loveland, Colorado

March 1991

The Historic American Engineering Record (HAER) documentation for the Cottonville Bridge was conducted by Fraserdesign of Loveland, Colorado, under contract with Jackson County, Iowa. The Jackson County Engineer's Office has proposed replacing the structure and moving it to function as a pedestrian crossing at Spruce Creek Campground in Bellevue Township. An almost complete lack of documentation, in county records and elsewhere, has made tracing the history of the Cottonville Bridge problematic. As a result, the structure's date of erection and the identity of its designer remain obscure. The bridge itself is an enigma - a unique structural type that combines elements that are at once sophisticated and rudimentary, anomalous and typical - and displays no physical evidence with which to trace it definitively. This report presents factual information to the extent that it is available, but must, of necessity, rely on educated speculation for discussion of the bridge's design and construction.

Northern Jackson County, like much of Iowa, has developed around a rural, agrarian economy. By the mid-1840s, the region was generally settled, and most of the county had been surveyed and divided into townships. In 1846, the year Iowa obtained statehood, Richland Township was created from the northern portion of Perry Township. Located on the township's northern edge, the town of La Motte, emerged as the region's principal settlement, becoming a social center for both Richland and Prairie Springs townships.¹

In September 1850, a post office was established along the Maquoketa-to-Dubuque wagon road, between Richland Township sections 22 and 27. Samuel Cotton was the first postmaster, and the fledgling settlement that developed here became known as Cottonville. By the end of the Civil War, Cottonville comprised two grocery stores, a blacksmith shop, several houses, a church and a saloon.² The town's prosperity proved to be short-lived, however. Any chance for continued growth ended in the 1880s when the Cascade, Bellevue and Western Railroad built its line south from Dubuque between La Motte and Bellevue, passing well to the north of Cottonville. By the end of the 19th century most of the town's businesses had closed; on December 14, 1900, the post office itself was discontinued. Today, Cottonville is home to a handful of residents and an old cemetery known as Jackson County's Arlington, where several civil war veterans are interred.³

Ironically, Cottonville's decline was largely a result of the region's continued growth. As the population increased, settlers petitioned county officials to build better road networks and bridge the area's streams and rivers. The development of more

reliable roads made travel to the larger towns of Maquoketa, La Motte, and even Dubuque, fairly routine. As a result, the need for localized service centers such as Cottonville diminished. The advent of the automobile and subsequent construction of U.S. Highway 61 from Dubuque to Maquoketa, west of Cottonville, assured that the community would remain dormant.⁴

The Maquoketa River and its North Fork are Jackson County's primary watercourses, flowing generally west-to-east through the county before draining into the Mississippi River. The region is also rife with smaller streams and ditches, and many of these required bridging as road networks developed. Built of timber, the earliest spans typically required replacement by the early 1900s. And partially as a result, the first twenty years of the new century marked a period of prolific bridge building in the county. Numerous steel and concrete bridges were erected during this period, many at new crossings, but perhaps even more as replacements for worn-out timber structures.

At the turn of the century the Western Bridge Company of Chicago and the Clinton Bridge and Iron Works of Clinton, Iowa, were the primary bridge builders for the county. In 1908 the county commissioners first contracted with Clinton Bridge and Iron for bridge construction on a county-wide basis, and Clinton received such annual contracts in subsequent years to erect Jackson County's steel and timber bridges.⁵

Among the spans erected in 1908 was a 62-foot pony truss located in the southwest quarter of Richland Township's section 21, a little more than a mile west of Cottonville.⁶ Known alternately as the Cottonville Bridge or the Sprank Bridge (after adjacent landowner Peter Sprank), this small-scale steel structure was the predecessor to the current Cottonville Bridge. In September 1913, five years after the Sprank Bridge was built, F.R. Sheehan was paid \$3.75 for repairing the structure.⁷ Based on the cost, the work was evidently minor. The entry is worth noting, though, because county records do not again refer to a bridge at this location for over forty years. Sometime in the interim, the current Cottonville Bridge replaced the earlier pony truss.

Structure Inventory and Appraisal records maintained by the Jackson County Engineer indicate that the existing Cottonville Bridge was built in 1946.⁸ Consisting of a single 50-foot span with a 16-foot roadway width, the new bridge is somewhat smaller than the structure it replaced.⁹ The superstructure of the new Cottonville Bridge is configured as a simply supported through arch - a 20th century equivalent of the venerable bowstring arch-truss built extensively on Iowa's roads in the 1870s and 1880s. In this design, the roadway deck is suspended by means of vertical members (acting in tension) from a pair of steel arches (which act in compression). The lower chord acts in tension to withstand the horizontal springing of the arches, thus obviating the need for thrust blocks at the abutments and giving the bridge its structural designation: tied arch.

The verticals subdivide each web into four equal panels. Each 8-inch-wide arch rib is made up of a steel channel upper chord [*A.I.S.C. standard C8x18.37*] and wide flange lower chord [*A.I.S.C. standard W8x17*], custom-rolled on an elliptical curve by the Bethlehem Steel Company.¹⁰ These chords are joined by curved gusset plates at the panel points and welded lacing bars between. Tapering in depth from 32 inches at the base to 15 inches at the crown, each arch was shop fabricated in two pieces and joined at the center gusset plate on-site by a series of bolts. Wide flange verticals [*A.I.S.C. standard W8x31*] function as suspenders between arches and deck; to these are bolted the lower chords - two 4" x 3/8" steel bars that absorb the horizontal springing of the arch. Wide flange floor beams [*A.I.S.C. standard W16x14*] are field-bolted to the bases of the verticals. These support wide flange stringers [*A.I.S.C. standard W8x15*], which in turn support a timber plank deck. The superstructure is supported by timber pile abutments, joined at the top by steel channel sills to form bents. Timber planks with log piles form the angled wingwalls on both sides.

The most notable aspect of the Cottonville Bridge is its use of both welded and bolted connections. Fabricated in a shop and shipped to the site in two pieces, the arches make extensive use of welding. The laces between their upper and lower chords are welded, as are the gusset plates, which, with their large surfaces and radiused corners, resemble those of a Vierendeel truss. Similarly, the two bars that comprise each lower chord are joined by welded steel lacing bars, and the balusters and rails of the guardrails are joined by welding. The only parts of the arches that are not welded, in fact, are the field-joints at the center panels; these are bolted. A sophisticated detail of the bridge involves the treatment of the vertical/floor beam connections. At the bottom end of each vertical is welded a curved flange forming the visual transition between the vertical and horizontal planes.

This extensive use of welding sets the Cottonville Bridge apart from standard pony trusses of its time and places it within the realm of a developing new technology. Structural welding first gained acceptance early in the 20th century as a means to repair damaged or broken metal parts. Acceptance of welding in new construction came more slowly in its nascent stages, however, as up through the 1920s there were few qualified welders and little proper equipment.¹¹ The earliest welded bridges in the United States were railroad crossings erected in the late 1920s. In November 1927 the Westinghouse Electric and Manufacturing Company completed a 53-foot, arc-welded, twin-girder bridge over Thompson's Run in Turtle Creek, Pennsylvania.¹² The following year, Westinghouse completed the country's second arc-welded span, the Boston and Main Street Railroad Bridge at Chicopee Falls, Massachusetts.¹³ A year later, Poland produced the world's first all-welded highway bridge, an 88-foot pony truss over the Sludwia River near Lowicz.¹⁴

From these formative structures, the use of welding in bridge construction evolved slowly. Engineers initially designed welded bridges in the same manner as riveted structures, simply substituting welds for rivets on the gusset plates.¹⁵ It soon became apparent, though, that welding required the development of more efficient designs, better suited for the new technology. Efforts were made to mold steel shapes as efficiently as possible along stress lines, and curved members were used as a means to eliminate sharp corners and corresponding breaks in the stress path. Only a handful of welded truss bridges were

built in this country before World War II. During the war, construction of new bridges of any kind was severely curtailed due to war-caused material shortages. Welded technology came of age during the war, and from ship building to weapons production to the development of transport systems, welding found widespread applications.¹⁶

When the hostilities ended, welded bridge construction found new favor with American bridge engineers. Standard plans for all-welded plate girders were subsequently developed by several state highway departments. The first all-welded bridge in Iowa - the Benton Street Bridge in Iowa City - was completed in 1949. A five-span, continuous plate girder, the structure was designed by noted Iowa engineer Edward L. "Ned" Ashton. During the 1950s, welded bridge construction proliferated in Iowa and elsewhere, as all-welded deck and through girder bridges gained widespread acceptance. Though not a girder structure, the Cottonville Bridge falls within the milieu of welded construction in the 1940s. With its bolted and welded connections, it represents a transition between the two technologies. Though undocumented definitively, the Cottonville Bridge is among Iowa's earliest examples of welded bridge construction.

Perhaps the most intriguing question regarding the Cottonville Bridge involves the identity of its designer. Its sophisticated configuration, detailing and extensive use of welded connections, suggests the involvement of a masterful hand. Previous speculation regarding the span's designer has focused on Ned Ashton, chief engineer on the Benton Street Bridge project and an early advocate of welded construction.¹⁷ With its tied arch design and deepening of the ribs at the ends, the Cottonville Bridge resembles a greatly scaled-down version of the Julien Dubuque Bridge over the Mississippi River, designed by Ashton in 1941. This is reinforced by similarities in detailing between the two structures. Exhaustive research, though, has uncovered no evidence that Ashton was involved with the design of the Cottonville Bridge.

The origin of the Cottonville Bridge remains unknown. Its sophisticated design and use of welding suggests an outside influence such as a national journal or publication of the time. One major source of information on welding technology was the James F. Lincoln Arc Welding Foundation of Cleveland. An adjunct of the Lincoln Electric Company, a leading supplier of welding equipment, the foundation established an award program in 1937, and began soliciting scholarly papers and designs for a variety of welded bridges and structures. The Lincoln Foundation published award-winning designs in a series of monographs, such as *Arc Welding in Design, Manufacturing and Construction* (1939) and *Studies in Arc Welding Design and Manufacturing* (1943).

This theory of a national design source is bolstered by the existence of an almost identical span in Sarpy County, Nebraska. Located over Big Papillion Creek south of Omaha, the Sarpy County bridge has a longer span length (80 feet, 4-panel, versus 50 feet, 6-panel), but is otherwise identical to the Cottonville Bridge.¹⁸ Although their design is not depicted in the Lincoln Foundation publications, the bridges clearly share a single design source.

In the 1940s most of Jackson County's spans were built by county road and bridge crews, under the direction of Carlyle Bowman, who served as the county engineer throughout much of the decade.¹⁹ County records and physical evidence indicate that the Cottonville Bridge, like its Sarpy County twin, was most likely fabricated and erected by a county crew, rather than by an outside contractor. Now beginning to fail, the welds on the Cottonville Bridge do not appear to be the work of a skilled, highly qualified welder. Instead, they seem attributable to a less-experienced workman likely to have been employed on a county road and bridge crew.²⁰ The bridge, moreover, appears to have been designed to be fabricated and erected by men with limited skills and equipment. The lower chords of the truss rest directly on the simply constructed timber substructure, without benefit of bearing shoes, which would have necessitated relatively sophisticated steel castings. The arches were each fabricated in two halves and assembled on-site, with welded shop connections and bolted field connections. This would have required only small-scale hauling and hoisting equipment and minimal falsework to erect the span. Other than the curved arches, which required custom fabrication from the mill, the truss is comprised of standard rolled steel sections, readily available and easily handled by a county bridge crew. Finally, the deck is made of timber, which was more easily constructed than poured-in-place concrete, the standard deck material for the period. These elements, combined with the lack of county records to indicate otherwise, seem to indicate that the bridge was fabricated and erected using local labor.

This lack of records is emblematic of the research for the Cottonville Bridge, which has proved to be a singularly undocumentable structure. With construction date approximated, the designer unknown and the builder sketched through fragmentary and sometimes contradictory evidence, this modest span presents more questions than answers. Nevertheless, the Cottonville Bridge is significant as an early attempt at welded steel construction. The design is well-executed, with the visual lines of arch, vertical and deck resolved with an uncharacteristic degree of sophistication and forethought. The execution, however, has not lived up to the design's potential - and, indeed, may not have been intended to, if designed for fabrication by an untrained work crew. It is in this unskilled execution that the bridge has failed, as several of the welds have developed structural weaknesses that will necessitate the span's removal. Why the designer delineated this unique bridge type rather than a standard steel beam structure remains, unfortunately, a mystery.

Endnotes

¹*History of Jackson County, Iowa, 1900-1989* (Maquoketa, Iowa: Jackson County Historical and Genealogical Societies, 1989), pp. 64-66; "Richland Twp." n.d., one typewritten page regarding the history of Richland Township, on file at the Jackson County Historical Society, Maquoketa, Iowa.

²"Cottonville." n.d., one typewritten page regarding the history of Cottonville, on file at the Jackson County Historical Society, Maquoketa, Iowa.

³*Ibid.*

⁴On August 19, 1938, the *Jackson Sentinel* described Cottonville, then all but deserted, in nostalgic terms: "Today Cottonville sleeps peacefully with few interruptions. Every two years the general store building is opened as a polling place, and each Memorial Day members of the American Legion come to decorate the graves of the hero dead... Where once stood a thriving town, now can be seen a half dozen uninhabited houses and deserted stores, the wind whistles through the broken windows of the blacksmith shop, and the shutters clap against dilapidated houses. In the summer the lilac bushes bloom amid peaceful quietness, and a profusion of wild vines and bushes grow in the once well-kept yards... When the railroad missed the town, Cottonville began to die."

⁵Proceedings of the Jackson County Board of Supervisors, Book J, page 354 (27 February 1908), located at Jackson County Courthouse, Maquoketa, Iowa.

⁶"Bridge No. 27, Sprank Bridge," (SW1/4, Section 21, Richland Township), Jackson County Bridge Book, located at Jackson County Courthouse, Maquoketa, Iowa.

⁷*Ibid.*

⁸Jackson County Engineer's Office, Structure Inventory and Appraisal, Structure Number 194390, Jackson County Courthouse, Maquoketa, Iowa. This date's source is unknown at the county engineer's office, and efforts to corroborate it through county records, local newspapers, contractor's records, engineer's records, oral interviews with nearby residents and on-site inspection have failed. See bibliography for specific research sources and interviews. The only written reference found for this bridge related to its painting in 1955: "Supervisors' Meeting, Painting of Steel Bridges," *Maquoketa Community Press*, 26 April 1955, p. 1. That April the county contracted with Eldon C. Ferguson of Des Moines to paint the Cottonville Bridge and eight other metal spans.

⁹Description of the Cottonville Bridge is based on field inspection by Clayton Fraser and Carl McWilliams, 11 September 1990.

¹⁰Bethlehem has retained plans and records of many small bridges throughout the country, but no records of the Cottonville Bridge have survived. Bethlehem's Fabricated Steel Construction Division, which rolled steel for bridges throughout the Midwest, was disbanded in 1974. At this time most of the Division's records and numerous bridge plans, including, possibly, the Cottonville Bridge, were discarded.

¹¹For an excellent discussion and exhaustive bibliography on the development of welding in bridge construction, see Jeffrey Hess and Robert Hybben, "Historic American Engineering Record: Benton Street Bridge (HAER No. IA-30)," October 1989.

¹²*Ibid.* p. 6.

¹³Nathan W. Morgan, "Development of Welded Bridge Construction," *The Welding Journal* (October 1953); p. 923.

¹⁴Stefan Bryla, "The First Arc-Welded Bridge in Europe," *The Engineer* 148 (September 1929): pp. 248-249.

¹⁵Nathan W. Morgan, "Development of Welded Bridge Construction," p. 924.

¹⁶Hess and Hybben, "Benton Street Bridge," p. 9.

¹⁷The National Register eligibility of the Cottonville Bridge is based in part upon this presumed association with Ashton. For a discussion of this, see two reports by James C. Hippen: "Jackson County Iowa, Report on Historic Significance of Bowstring (Tied Arch) Bridge," June 1989; and "Supplementary Report, Bowstring (Tied Arch) Bridge, S 21, T 86N, R 3E, Jackson County," August 1989, on file at Iowa Department of Transportation, Ames, Iowa. For additional information regarding Ashton, see two comprehensive biographical sources: Richard FitzGerald, "Bridges Are His Business," *The Iowa Alumni Review*, December 1958, p. 12-17; and Marshall McKusick, "Ashton House and the Engineer Who Built It," (see especially pp. 46-69), typewritten report, December 1986, in the Ned Ashton Papers, Iowa State Historical Society Archives, Iowa City, Iowa.

¹⁸Exhaustive research at the Sarpy County Courthouse in Papillion, Nebraska, failed to unearth any other information that could definitively link the two bridges. The only specific reference to the Big Papillion Creek Bridge was an August 7, 1944, entry in the County Commissioners' minutes, discussing repairs necessary due to flood conditions.

¹⁹Proceedings of the Jackson County Board of Supervisors, *passim*; for specific references, see Unpublished Sources in the bibliography.

²⁰Two men who worked on county bridge crews in the 1940s were interviewed, but neither could recall having worked on the Cottonville Bridge. Both indicated there were numerous crew members, that they only worked for the county for brief periods, and they could not recall many of the bridges on which they had worked.

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- Grover, LaMotte. "Welded Bridges." *Welding Journal*. v. 27, no.10 (October 1948): 812-826.
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Parker, Jessie M. *Jackson County History, Iowa*. Iowa Writer's Program, Work Projects Administration, 1942.

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Ashton, Ned L. "Comments On Design And Construction Of Various Mississippi River Bridges." Davenport, Iowa, 6 April 1944 (lecture presented to the American Society of Civil Engineers, Tri-City Section, on file in the Ashton Collection, State Historical Society of Iowa, Iowa City).

Ashton, Ned L. "Mississippi River Bridge At Dubuque, Iowa." Iowa City, Iowa, 7 February 1944 (on file in the Ashton Collection, State Historical Society of Iowa, Iowa City).

Ashton, William D. Correspondence to Carl McWilliams of Fraserdesign, 28 November

1990. Based in Davenport, Iowa, William Ashton is Ned Ashton's nephew, and is also an engineer. In this letter he writes "The [Cottonville] bridge was not designed by Ned L. Ashton."

"Cottonville." n.d., one typewritten page regarding the history of Cottonville (on file at the Jackson County Historical Society, Maquoketa, Iowa).

Hess, Jeffrey A. and Hybben, Robert. "Historic American Engineering Record: Benton Street Bridge (HAER No. IA-30)." October 1989.

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Hippen, James C. "Supplementary Report, Bowstring (Tied Arch) Bridge, S 21, T 86N, R 3E, Jackson County, August, 1989." Decorah, Iowa, August 1989.

Lutz, Olga. Correspondence addressed to "Grace", one typewritten page regarding the history of Cottonville. Andrew, Iowa, 22 February 1974 (on file at the Jackson County Historical Society, Maquoketa, Iowa).

McKusick, Marshall. "Ashton House and the Engineer Who Built It." Iowa City, Iowa, December 1986.

Proceedings of the Jackson County Board of Supervisors, 1899-1955, located in the Jackson County Courthouse, Maquoketa, IA; refer to the following entries: 12 March 1935 (Book 3, page 31); 21 August 1939 (Book 4, page 213-214); 30 July 1942 (Book 4, page 551); 6 October 1943, (Book 5, page 48); 5 January 1944, (Book 5, page 72); 9 June 1944 (Book 5, page 114); 5 October 1945 (Book 5, page 225); 4 June 1948 (Book 5, page 458); 4 March 1949 (Book 5, page 521); 4 August 1949 (Book 5, page 557).

Richland Township Plat Map, printed in 1948, on file in the Jackson County Clerk's Office, Maquoketa, IA.

"Richland Twp." n.d., one typewritten page regarding the history of Richland Township (on file at the Jackson County Historical Society, Maquoketa, Iowa).

Sarpy County (Nebraska) Commissioners' Record, 1930-1955, located in the Sarpy County Courthouse, Papillion, NE; see especially 7 August 1944, Book 10, page 174.

Sprank, Florence. Diary entries for the years 1930 through 1955, included among the papers of the estate of Leo Sprank, in the possession of Donna J. Beidler, Dubuque, Iowa.

ORAL INTERVIEWS

Ashton, William. Telephone interviews conducted by Carl W. McWilliams, 22 October 1990; 6 November 1990. William Ashton, currently a consulting engineer with the firm Ashton-Barnes, in Davenport, Iowa, is the nephew of Ned Ashton, having worked with him as a bridge designer in the late 1950s.

Beidler, Donna. Telephone interviews conducted by Carl W. McWilliams, 26 September 1990; 16 October 1990. Mrs. Beidler is the niece of Leo and Florence Sprank who resided and owned farmland adjacent to the bridge during the period it was erected. Mrs. Beidler was also the administrator of Leo Sprank's estate.

Felten, William. Oral interview conducted by Carl W. McWilliams, 11 September 1990. William Felten has resided and owned farmland on the north side of the Cottonville Bridge since the early 1960s.

Gleason, Joe. Oral interview conducted by Carl W. McWilliams, 11 September 1990. Joe Gleason has resided and owned farmland near Cottonville for many years.

Griffith, George. Telephone interview conducted by Carl W. McWilliams, 22 October 1990. George Griffith, currently a resident of Wardensville, West Virginia, studied under, and worked with Ned Ashton as a consulting engineer from 1950 to 1952.

Hoff, Melvin. Oral interview conducted by Carl W. McWilliams, 11 September 1990. Melvin Hoff is a long-time resident of Jackson County.

Koos, Lawrence. Telephone interview conducted by Carl W. McWilliams, 11 September 1990. Lawrence Koos has resided and owned farmland near Cottonville for many years.

Kopetz, Jack. Telephone interview conducted by Carl W. McWilliams, 23 October 1990. Jack Kopetz is Chief Bridge Engineer for Howard, Needles, Tammen and Bergendoff, Consulting Engineers, Kansas City, Missouri.

Lentfer, Robert. Telephone interview conducted by Carl W. McWilliams, 22 October 1990. Robert Lentfer, currently a structural engineer with the firm of Shives-Hatterly in Iowa City, studied under and worked with Ned Ashton as a consulting engineer from 1956 to 1973.

McDonald, Donald L. Telephone interview conducted by Carl W. McWilliams, 11 September 1990. Donald McDonald was employed by the Jackson County Engineer's Office in 1946.

McKusick, Joye (Ashton). Telephone interview conducted by Carl W. McWilliams, 22

October 1990. Mrs. McKusick is the daughter of Ned Ashton.

McKusick, Marshall. Telephone interview conducted by Carl W. McWilliams, 22 October 1990. Marshall McKusick is the son-in-law of Ned Ashton, and is the author of biographical works regarding Ashton.

Roth, Arthur. Telephone interview conducted by Carl W. McWilliams, 26 October 1990. Arthur Roth is Corporate Communications Division Officer with Bethlehem Steel Corporation, Bethlehem, Pennsylvania.

Scheckel, Adelaide. Telephone interview conducted by Carl W. McWilliams, 26 September 1990. The Scheckel family has resided and owned farmland adjacent to the stream about one-and-one-half mile north of the Cottonville Bridge since 1918. Although officially unnamed, the Scheckels have always referred to the stream as "Skunk Creek".

Smith, Richard. Telephone interview conducted by Carl W. McWilliams, 21 February 1991. Richard (Dick) Smith is editor of the *Welding Innovation Quarterly*, published by the James F. Lincoln Arc Welding Foundation, Cleveland, Ohio.

Sprank, J.A. Telephone interview conducted by Carl W. McWilliams, 24 September 1990. J.A. Sprank is related to Leo and Florence Sprank who resided and owned farmland adjacent to the Cottonville Bridge during the period it was erected.

Sprank, Peter. Telephone interview conducted by Carl W. McWilliams, 26 September 1990. Peter Sprank is related to Leo and Florence Sprank who resided and owned the farm adjacent to the Cottonville Bridge while it was being erected.

Springer, Melvin. Telephone interview conducted by Carl W. McWilliams, 11 September 1990. Melvin Springer worked on road and bridge crews in 1942 for the Jackson County Engineer's Office and is a long-time Jackson County resident.

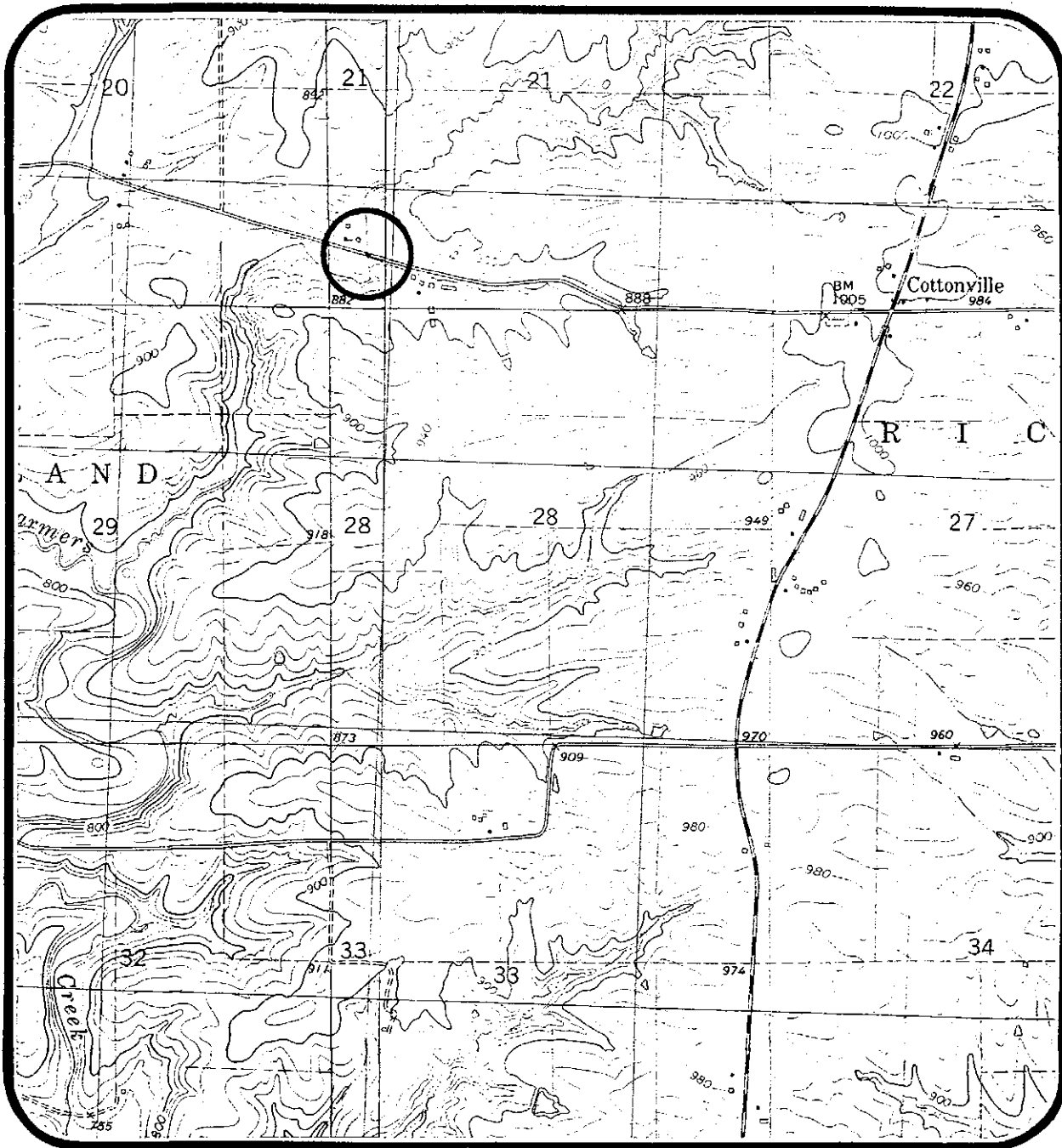
Theisen, Sarverna. Telephone interview conducted by Carl W. McWilliams, 25 September 1990. Mrs. Theisen grew up on a farm near Cottonville during the late 1910s and 1920s. She left the area in 1931, and now resides elsewhere in Jackson County.

Tubbs, Annabelle. Interview conducted by Carl W. McWilliams, 11 September 1990; telephone interviews conducted by Carl W. McWilliams, 25 September 1990; 5 November 1990. Mrs. Tubbs is deeply interested in Jackson County history. In addition to conducting research herself for this project, Mrs. Tubbs provided invaluable leads to numerous other oral and written sources.

Wimer, Robert E. Telephone interview conducted by Carl W. McWilliams, 24 September

1990. Robert Wimer was enrolled in the Civilian Conservation Corps in Jackson County from 1934 to 1938. He is knowledgeable about Jackson County C.C.C. activities during the 1930s, including road work and bridge building. He has also written articles regarding the history of the C.C.C. appearing in the *History Of Jackson County Iowa 1900 - 1989*.

Wirtz, Joe. Oral interview conducted by Carl W. McWilliams, 11 September 1990. Joe Wirtz has resided and owned farmland south of the Cottonville Bridge, for many years.



Reduced from USGS Fulton, Iowa, and Andrew, Iowa, quadrangle maps [7.5 minute series, 1980].